THE MCCAULEY EXPEDITION TO THE SAN JUAN REGION OF COLORADO IN 1877

By F. Martin Brown

Lieutenant Charles A. H. McCauley was dispatched from Fort Leavenworth, Kansas, in June 1877 to make a survey of the southwestern part of Colorado south of the San Juan Mountains between the Continental Divide and the Rio de los Animas. In accord with his instructions that "natural history collections made would be of interest" he collected extensively in all fields: botanical, zoological, geological and anthropological. His collections of invertebrates included a large number of butterflies and moths that were entrusted to Herman Strecker for determination and report. I have been able to learn of no Smithsonian field collector assigned to the expedition but am convinced that the above quoted phrase originated with Spencer F. Baird, secretary of the Smithsonian Institution. Since McCauley reserved the vertebrates to study and report upon himself, it seems highly probable that he doubled as officer-in-charge of the party and its naturalist.

He left Fort Leavenworth, Kansas, on 10 June 1877 and rendezvoused with his party at Fort Garland, Colorado, in the eastern edge of the San Luis Valley near the western approach to La Veta Pass. There he was joined by Lieutenant G. Valois and 22 men from the 22nd Cavalry Regiment. The party took to the field on 20 June, mounted, and accompanied by wagons. They returned to Fort Garland on 10 October having been in the field 123 days, established 96 different camps and travelled something over 2000 miles. I have not been able to discover a detailed account of the itinerary followed, nor a detailed map of it. The maps that accompany the published report of the expedition are rather general and summarize the routes of travel being used at that time throughout the region.

Because the types of one butterfly, *Boloria kriemhild* Strecker, and of eight moths described by Strecker were among the catch of the expedition I have felt it necessary to reconstruct an itinerary and thus amplify the published locality data for these insects.

The reconstruction is based upon data published in the McCauley report by Cyrus Thomas and Herman Strecker. I would like to note here that the report of the expedition has always been improperly cited in lepidopterological literature. It is invariably referred to as "Ruffner's Report." Lieutenant Ruffner was McCauley's superior and merely transmitted the report to the chief of Engineers. It took a year of occasional digging into government publications to discover this. The proper citation, a lengthy one, is given at the end of this paper which has been based upon McCauley's report and personal knowledge of the region he visited.

From Fort Garland the expedition struck across the San Luis Valley to its western side and then turned south, skirting the mountains, into New Mexico as far as Ojo Caliente. From there they turned southwest to the Rio Chama [7 July], up which they traveled to where the Rio Canjelon enters from the north. This stream was followed to the vicinity of the present town of the same name. Then the party struck north to Tierra Amarilla, following the Rio Chama and essentially over the route now traversed by U. S. Highway 285. They reached Tierra Amarilla, about 200 miles from Fort Garland, on 10 July. Although it was a good time of the year for it, little collecting was done on this leg of the journey. Apparently the party was hurrying to reach its primary area for exploration. A few miles from Tierra Amarilla they again picked up the Rio Chama and at the town of Chama took the west fork, Rito Chama, almost to its source. On [13 July] they crossed the divide to the upper Rio Navajo, a tributary of the Rio San Juan, and were on the Pacific slope. Once the San Juan country had been reached the survey and collecting began in earnest.

By 21 July, McCauley and his party were in Pagosa Springs and there established a base for operations. The distance from the Navajo to Pagosa Springs is about 30 miles, at most a day and a half of travel time. Thus the party may have reached Pagosa Springs as early as the 15th. The rest of the week involved was devoted to exploration of the Rio Blanco. Several days had been spent in setting up camp at Pagosa Springs during which time a good collection of Lepidoptera was made. The first real sally from Pagosa Springs was to the northwest.

The explorers penetrated the forested mountains as far as Weminuche Pass, just to the east of Rio Grande Pyramid, a towering peak that reaches 13,830 feet above sea level. By 31 July the party was back in Pagosa Springs and immediately struck out to the northeast. On 1 August they were camped on the upper Rio San Juan, probably in the meadows at the western foot of Wolf Creek Pass, now known as Bruce's Spruce Camp. They then turned southward to the headwaters of the Rio Navajo, crossing those of the Rio Blanco en route.

By 20 August, McCauley was again in Pagosa Springs. Now he traveled west and thoroughly covered the areas drained by the Rio Piedras, Los Piños and Florida from their headwaters at or above tree line to their confluence with the Rio de los Animas or the Rio San Juan. September 17th saw them in Camp 59 on the Rio de los Animas near its mouth, the most southwesterly point visited by the party. From there they turned eastward and toward Fort Garland. Little or no collecting was done then, the travelers were homeward bound and the season was late.

AN ANNOTATED ITINERARY OF THE EXPEDITION

I arranged in chronological order all of the dated localities that appear in the reports of Thomas and Strecker. When this was completed it became clear that some of the data as published were incorrect. Most of the errors were obvious and easily adjusted once the entire time-table was viewed. In the following table I have placed between quotation marks those data that I question for a particular date and proposed another date in *italics*. The page references that are given for each date refer to the McCauley report as cited in the bibliography.

DATE	LOCALITY	REMARKS
10.vi	Lv. Leavenworth, Kansas.	
13.vi	Arr. Fort Garland, Colo.	
20.vi	Lv. Ford Garland, Colo.	
4.vii	"waterfalls on San Juan, not far below Cp. 32"	This is from the note about *P. smintheus*, p. 1850. The date should be *4.viii.*
7.vii	Rio Chama, New Mexico	*N. persius*, p. 1858.
8.vii	"Rio Navajo Valley, upper part of river."	*D. plexippus*, p. 1853. The date should be *8.viii.*

DATE	LOCALITY	REMARKS
10.vii	Tierra Amarilla, New Mexico.	*Macroglossa senta*, n.sp., p. 1858.
13.vii	Rio Navajo, ca. 7800 feet.	*C. uhleri*, p. 1857; *Arctia F-pallida*, n. sp., p. 1860.
	"Pagosa Springs"	*Eurymone excelsa*, n. sp., pp. 1863–4. The proper date is questionable, it may be *18.vii* or possibly *15.viii.*
14.vii	near headwaters of Rio Blanco	*Ps. hera*, p. 1860.
15.vii	Deer Creek, trib. of upper Rio Blanco.	*S. charon*, p. 1857; *Arc. cervinoides*, p. 1860.
	"South Fork of Rio Chama, near its headwaters."	*E. epipsodea*, p. 1856. Date should read *5.vii.*
16.vii	Rio Blanco.	*Ct. sanguinaria*, n. sp., p. 1858; *Sp. antigone*, n. sp., p. 1860.
17.vii	"near Rio de los Piños."	*P. daunus*, p. 1849, see *27.viii.*
21.vii	Pagosa Springs.	*P. zelicaon*, p. 1849; *C. fragilis*, n. sp., p. 1859, *et al.*
22.vii	Pagosa Hot Springs.	p. 1846.
25.vii	Weminuche Pass, head of Rio de los Piños.	*Arg. atlantis*, p. 1854.
26.vii	Upper Weminuche Creek.	*B. myrina*, p. 1854.
27.vii	Weminuche Creek, head of Tule Valley.	p. 1846; *P. rutulus*, p. 1849; *et al.*
28.vii	Weminuche Creek to Rio Piedra; Near Rio Piedra; between Upper Rio Piedra and Rio Nutria.	*T. melinus*, p. 1852; *S. charon*, p. 1857; *Ps. hera*, p. 1860; *Ct. cressonana*, p. 1858.
31.vii	Pagosa Springs.	*E. tyndarus*, p. 1856. The species probably was collected on *25.vii* on Weminuche Pass.
1.viii	Waterfalls of Rio San Juan.	*E. epipsodea*, p. 1856; *Ps. hera*, p. 1860.
2.viii	Headwaters of Rio San Juan.	*M. nycteis*, p. 1855; *N. plantageonis* and *geometrica*, p. 1859.
7.viii	Lower Rio Blanco near wagon-road.	p. 1846.
8.viii	Rio Navajo valley, upper river.	*N. iole*, p. 1851; *L. battoides*, p. 1852; *L. weidemeyeri*, p. 1856.

DATE	LOCALITY	REMARKS
10.viii	Rio Navajo at headwaters, near mouth of canyon.	*F. stalachtaria*, p. 1863.
11.viii	headwaters of Rio Navajo	*M. perlata*, p. 1863.
	"Rio Florida"	*N. menapia*, p. 1850, see *11. ix.*
13.viii	near headwaters of Rio Blanco.	*Ct. matthewsi*, p. 1858.
14.viii	Upper Rio Blanco.	p. 1846.
20.viii	Pagosa Springs.	p. 1846.
23.viii	Rio Piedra at bridge of upper crossing.	p. 1846; *E. epipsodea*, p. 1856.
25.viii	Camp on Rio Piedras at bridge of upper crossing.	p. 1846.
27.viii	Rio de los Piños, at mouth of Vallecito Creek.	p. 1846.
	At the park.	*L. battoides*, p. 1852.
28.viii	Upper crossing of Rio de los Piños.	*T. titus*, p. 1852, *S. charon*, p. 1857.
29.viii	Valley of Vallecito Creek above its mouth.	p. 1846.
1.ix	upper part Vallecito Creek, below Camps 51 and 52	p. 1846.
2.ix	same as for 1.ix.	
3.ix	upper part of west fork of Vallecito Creek.	p. 1846.
4.ix	near Columbine Lake in Needles Mountains, 12,000 feet.	p. 1846.
11.ix	At upper crossing of Rio Florida, Camp 55.	p. 1846; *A. redimaculate*, p. 1860.
12.ix	Rio Florida, crossing of upper wagon-road.	p. 1846.
14.ix	Rio Florida	*L. ephestion* (*astyanax*), p. 1856.
	"canon on upper part of Rio Blanco"	p. 1846, see *14.viii.*
15.ix	Lower Rio Florida, Camp 57.	p. 1846; *A. nokomis*, p. 1853; *et al.*
	Above Indian Reservation.	*L. acmon*, p. 1852.
16.ix	Rio de las Animas, near mouth of Rio Florida.	p. 1846, Camp 58.
17.ix	Lower Rio de las Animas, near mouth, in New Mexico.	p. 1846.
18.ix	Rio de las Animas, near Camp 58.	p. 1846.
10.x	Fort Garland, Colorado.	

NOTES ABOUT CERTAIN BUTTERFLIES COLLECTED

"*Argynnis nokomis,*" p. 1853.

It was this butterfly that turned me to the study of McCauley's expedition. There is no doubt in my mind that Strecker was mistaken in his identification of it. His description and figures published in the McCauley report relate to *Speyeria cybele carpenteri* Edwards. McCauley's specimens, collected on 15 September, 1877, were taken in the valley of the Rio Florida somewhere between the present locations of U. S. Highway 160 and Colorado State Highway 284, about five miles west of Durango in La Plata County.

"*Argynnis*" [*Boloria*] *Kriemhild* p. 1854.

Strecker's description and figure acceptably apply to what we call *kriemhild* today. The trouble is two-fold. First, Strecker states that in addition to the McCauley material, "several specimens," he had others from Arizona. No *kriemhild* have since come to light from the region nor from any place in the Rocky Mountains south of southwestern Wyoming. Second, the type locality is given as "Rio Florida." McCauley was on the Rio Florida and actively collecting lepidoptera from the 11th to the 15th of September and possibly for a day around the 19th of that month. He collected downstream from where Colorado State Highway 160 crosses the river at about 8,000 feet elevation to the vicinity of the present hamlet Florida, at the northern boundary of the Ute Reservation, about 6,500 feet above sea level. These dates are very late in the year for *Boloria* at the elevations noted.

The situation needs considerable study. Possibly *kriemhild* is double brooded IF the material described by Strecker was collected by McCauley on the Rio Florida.

Erebia "tyndarus" [*callias,*] p. 1856.

Two captures are noted by Strecker: 27.vii at the head of Tule Valley on Weminuche Creek, and, 31.vii at Pagosa Springs. The latter is patently wrong. The species is an alpine insect and rarely found so low as tree line. Pagosa Springs is just over 7,000 feet elevation and is 5,000 feet below and many miles distant from tree line. However, on the 25th of July McCauley visited Weminuche Pass, 10,629 feet above sea level and he may have collected the specimens on the slopes of Rio Grande Pyramid

above tree line. I can see how the date number 25 in manuscript can be confused with 27. This does not explain the Pagosa Springs data. Around the 31st of August, McCauley was on upper Vallecito Creek. On the 4th of September he was at 12,000 feet at Columbine Lake and above it. It is possible that the specimen noted for 31 July Pagosa Springs really came from Columbine Pass region. Incidently, the central peak of the eastern rim of Columbine Basin has been named McCauley Peak. It reaches 13,551 feet above sea level.

REFERENCES

McCAULEY, C. A. H.—"Report on the San Juan Reconnaissance of 1877, by Lieutenant C. A. H. M'Cauley, Third Artillery, in charge." In Index to the Executive Documents of the House of Representatives for the Third Session of the Forty-fifth Congress, 1878–'79. In 18 volumes. Volume V.—Report of the Chief of Engineers, Part III. pp. 1750–1867, Pl. I, II. Washington, D. C. 1879.

Those who wish to follow the routes traveled by the McCauley party can do so in a general way on any good highway map of Colorado. A map that gives a better idea of the terrain is Sectional Aeronautical Chart "Trinidad (S-4)." Those who need to know in detail the terrain cover will find these sheets published by the U.S.G.S. sufficiently accurate: 15′ sheets of Colorado titled Ignacio, Creede, Pagosa Springs, San Cristobal, Summitville, and the 7½′ sheet entitled Needle Mountains.